

Claim 3 (amended). A semiconductor configuration, comprising:

a semiconductor body including a first connection zone of a first conductivity type, a second connection zone of the first conductivity type, a channel zone of the first conductivity type, at least one control electrode, and an insulation layer;

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said channel zone of the first conductivity type being formed between said first connection zone and said second connection zone;

said insulation layer surrounding said at least one control electrode;

said at least one control electrode extending, adjacent to said channel zone, from said first connection zone to said second connection zone;

said semiconductor body defining a vertical direction and a first lateral direction extending from said first connection zone to said second connection zone and a second lateral direction transverse to the first lateral direction;

said first connection zone, said second connection zone and said at least one control electrode extending in the vertical direction such that, when a voltage is applied between said

first and second connection zones, a current path along the lateral direction is formed in the channel zone;

said at least one control electrode being a substantially plate-shaped control electrode having a respective longitudinal extent in the vertical direction and in the first lateral direction and a lateral extent in the second lateral direction; and

said respective longitudinal extent being greater than said lateral extent.

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Claim 2 (amended). A semiconductor configuration, comprising:

a semiconductor body including a first connection zone of a first conductivity type, a second connection zone of the first conductivity type, a channel zone of the first conductivity type, at least one control electrode, and an insulation layer, said first connection zone having a first zone with a first dopant concentration and a second zone with a second dopant concentration, said first dopant concentration being higher than said second dopant concentration, and said second zone being formed between said first zone and said channel zone;

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said channel zone of the first conductivity type being formed between said first connection zone and said second connection zone;

said insulation layer surrounding said at least one control electrode;

said at least one control electrode extending, adjacent to said channel zone, from said first connection zone to said second connection zone;

said semiconductor body defining a vertical direction and a lateral direction; and

said first connection zone, said second connection zone and said at least one control electrode extending in the vertical direction such that, when a voltage is applied between said first and second connection zones, a current path along the lateral direction is formed in the channel zone.

Claim ³5 (amended). A semiconductor configuration, comprising:

a semiconductor body including a first connection zone of a first conductivity type, a second connection zone of the first conductivity type, a channel zone of the first conductivity type, at least one control electrode, and an insulation layer,

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said first connection zone having a first zone with a first dopant concentration and a second zone with a second dopant concentration, and said second zone completely surrounding said first zone in the lateral direction;

said channel zone of the first conductivity type being formed between said first connection zone and said second connection zone;

said insulation layer surrounding said at least one control electrode;

said at least one control electrode extending, adjacent to said channel zone, from said first connection zone to said second connection zone;

said semiconductor body defining a vertical direction and a lateral direction; and

said first connection zone, said second connection zone and said at least one control electrode extending in the vertical direction such that, when a voltage is applied between said first and second connection zones, a current path along the lateral direction is formed in the channel zone.

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Claim ~~6~~ (amended). A semiconductor configuration, comprising:

a semiconductor body including a first connection zone of a first conductivity type, a second connection zone of the first conductivity type, a channel zone of the first conductivity type, at least one control electrode, and an insulation layer;

said channel zone of the first conductivity type being formed between said first connection zone and said second connection zone;

said insulation layer surrounding said at least one control electrode;

said at least one control electrode extending, adjacent to said channel zone, from said first connection zone to said second connection zone;

said semiconductor body defining a vertical direction and a lateral direction;

said first connection zone, said second connection zone and said at least one control electrode extending in the vertical direction such that, when a voltage is applied between said first and second connection zones, a current path along the lateral direction is formed in the channel zone;

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said first connection zone having a first zone with a first dopant concentration and a second zone with a second dopant concentration;

said second connection zone having a third dopant concentration;

said channel zone having a fourth dopant concentration; and

said fourth dopant concentration being lower than said first and third dopant concentrations.

Claim ~~7~~⁵ (amended). A semiconductor configuration, comprising:

a semiconductor body including a first connection zone of a first conductivity type, a second connection zone of the first conductivity type, a channel zone of the first conductivity type, at least one control electrode, and an insulation layer;

said channel zone of the first conductivity type being formed between said first connection zone and said second connection zone;

said insulation layer surrounding said at least one control electrode;

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said at least one control electrode extending, adjacent to
said channel zone, from said first connection zone to said
second connection zone;

said semiconductor body defining a vertical direction and a
lateral direction;

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cont. said first connection zone, said second connection zone and
said at least one control electrode extending in the vertical
direction such that, when a voltage is applied between said
first and second connection zones, a current path along the
lateral direction is formed in the channel zone;

said semiconductor body having a rear side;

a layer of the first conductivity type being disposed at said
rear side;

said first connection zone having a first zone with a first
dopant concentration and a second zone with a second dopant
concentration;

said layer having a third dopant concentration;

said third dopant concentration substantially [corresponds]
corresponding to said first dopant concentration; and

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said layer being connected to said first connection zone.

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Claim 8/ (amended). A semiconductor configuration, comprising:

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a semiconductor body including a first connection zone of a first conductivity type, a second connection zone of the first conductivity type, a channel zone of the first conductivity type, at least one control electrode, an insulation layer, a further first connection zone, and a further channel zone extending between said further first connection zone and said second connection zone;

said channel zone of the first conductivity type being formed between said first connection zone and said second connection zone;

said insulation layer surrounding said at least one control electrode;

said at least one control electrode extending, adjacent to said channel zone, from said first connection zone to said second connection zone;

said semiconductor body defining a vertical direction and a lateral direction;

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said first connection zone, said second connection zone and said at least one control electrode extending in the vertical direction such that, when a voltage is applied between said first and second connection zones, a current path along the lateral direction is formed in the channel zone; and

said at least one control electrode extending, adjacent to said second connection zone, said channel zone and said further channel zone, from said first connection zone to said further first connection zone.

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Claim ⁷9 (amended). A semiconductor configuration, comprising:

a semiconductor body including a first connection zone of a first conductivity type, a second connection zone of the first conductivity type, a channel zone of the first conductivity type, at least one control electrode, and an insulation layer;

said channel zone of the first conductivity type being formed between said first connection zone and said second connection zone;

said insulation layer surrounding said at least one control electrode;

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said at least one control electrode extending, adjacent to
said channel zone, from said first connection zone to said
second connection zone;

said semiconductor body defining a vertical direction and a
lateral direction;

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cont.
said first connection zone, said second connection zone and
said at least one control electrode extending in the vertical
direction such that, when a voltage is applied between said
first and second connection zones, a current path along the
lateral direction is formed in the channel zone;

said semiconductor body having a front side and a rear side;
and

said first connection zone extending, in the vertical
direction, from said front side to said rear side of said
semiconductor body.

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Claim ~~10~~ (amended). A semiconductor configuration,
comprising:

a semiconductor body including a first connection zone of a
first conductivity type, a second connection zone of the first

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conductivity type, a channel zone of the first conductivity type, at least one control electrode, and an insulation layer;

said channel zone of the first conductivity type being formed between said first connection zone and said second connection zone;

said insulation layer surrounding said at least one control electrode;

said at least one control electrode extending, adjacent to said channel zone, from said first connection zone to said second connection zone;

said semiconductor body defining a vertical direction and a lateral direction;

said first connection zone, said second connection zone and said at least one control electrode extending in the vertical direction such that, when a voltage is applied between said first and second connection zones, a current path along the lateral direction is formed in the channel zone; and

said semiconductor body having a rear side; and

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an electrically conductive layer disposed on said rear side of said semiconductor body for making contact with said first connection zone.

Claim ¹~~11~~ (amended). A semiconductor configuration, comprising:

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a semiconductor body including a first connection zone of a first conductivity type, a second connection zone of the first conductivity type, a channel zone of the first conductivity type, at least one control electrode, an insulation layer, and an electrically conductive zone introduced in said first connection zone for making contact with said first connection zone;

said channel zone of the first conductivity type being formed between said first connection zone and said second connection zone;

said insulation layer surrounding said at least one control electrode;

said at least one control electrode extending, adjacent to said channel zone, from said first connection zone to said second connection zone;

said semiconductor body defining a vertical direction and a lateral direction; and

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said first connection zone, said second connection zone and said at least one control electrode extending in the vertical direction such that, when a voltage is applied between said first and second connection zones, a current path along the lateral direction is formed in the channel zone.

Claim ~~13~~ (amended). A semiconductor configuration, comprising:

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a semiconductor body including a first connection zone of a first conductivity type, a second connection zone of the first conductivity type, a channel zone of the first conductivity type, at least one control electrode, an insulation layer, and an electrically conductive zone introduced in said second connection zone for making contact with said second connection zone;

said channel zone of the first conductivity type being formed between said first connection zone and said second connection zone;

said insulation layer surrounding said at least one control electrode;

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said at least one control electrode extending, adjacent to
said channel zone, from said first connection zone to said
second connection zone;

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cont.

said semiconductor body defining a vertical direction and a
lateral direction; and

said first connection zone, said second connection zone and
said at least one control electrode extending in the vertical
direction such that, when a voltage is applied between said
first and second connection zones, a current path along the
lateral direction is formed in the channel zone.

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